C6985-6 1A

OCTOBER 1990

ELECTRIC LIGHT & POWER

EL&P

Volume 68, Number 10
A PENNWELL PUBLICATION

VOICE OF THE ELECTRIC UTILITY INDUSTRY

Oil price hikes extract advice

2 oil-fired utilities explain

Mark T. Hoske
News Editor

WASHINGTON—The Iraq-Kuwaiti crisis has given the electric utility industry the opportunity to promote energy conservation and other energy policies to customers, legislators, and to the Department of Energy for the emerging National Energy Strategy.

Views touted by various industry leaders include the need to renew the nuclear option, augment coal technologies and renewables, increase domestic oil and natural gas production, cut dependency on imported oil, and, perhaps most uniformly, increase energy efficiency.

Iraqi and Kuwaiti oil lost through the blockade amounts to an estimated 9 percent of world production, 4.45-million bbl/day, according to the Department of Energy. With other countries' increases in production, that shortfall had fallen to 3.5 million bbl/day in mid-September and was expected to fall to a million barrel per day as early as November, DOE said.

The U.S. imports more than half of its oil and half of that comes from the Middle East. However, less than 4 percent of U.S. oil consumption goes to utilities; transportation consumes nearly two-thirds.

Impact on utilities

Nationwide, 5.7-percent of utility capacity was oil-fired in 1989; some regions vary widely from this figure. Despite that, oil price hikes can have a severe impact on utilities heavily reliant on oil (see related story, right).

The Mideast oil embargo of 1973 caused the market price of oil to increase fivefold. In the 1979 crisis prices

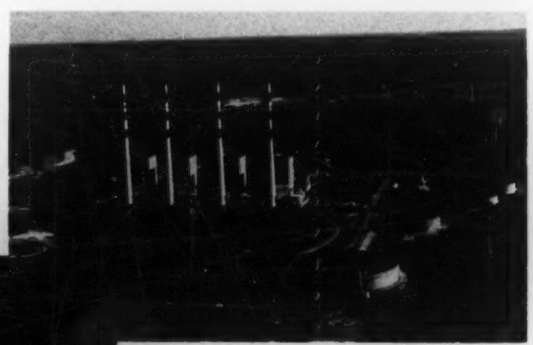
Continued on page 48

BARRINGTON, IL—Two utilities among the most dependent on oil are Commonwealth Energy System, Cambridge, MA, and Long Island Lighting Co., Hicksville, NY.

CES has about 75-percent oil-fired generation, 619 MW; LILCo, because of a winter shortfall of natural gas pipeline capacity, has 72-96 percent oil-fired generation, 4271-4660 MW, depending on the season. LILCo has the largest oil-fired plant; CES, the most efficient.

Both continue to invest heavily in energy efficiency programs to ease their dependence on oil.

More efficiency, p.3



Long Island Lighting's Northport plant (above), is the largest U.S. oil-fired power station, with four 375-MW units and five oil tanks. The units, built 1967-77, burn 12-million barrels oil per year. At the $26.77 per-barrel price LILCo recently paid, Northport oil would cost more than $321 million a year, a 64-percent increase. Commonwealth Energy System, with 75-percent oil-fired capacity, has the benefit of the most-efficient oil-fired plant, Canal 1. LILCO and CES seek to augment oil alternatives, including customer marketing programs on conservation and load control. The table, far right, shows regional utility oil use; electric utilities use a small fraction of total U.S. imported oil.

CES expects its average electricity price to increase from 6.07¢/kWh to near 9¢/kWh in the last quarter, as a result of higher oil prices, increased conservation efforts and the cost of the now-operating Seabrook nuclear plant.

Before the crisis, CES had purchased the required No.6, 2.2-percent sulfur fuel oil at $13 per barrel; prices rose to $22.40 per barrel. As a result of a September filing to recoup the higher fuel costs, the utility expects a "rather dramatic increase" in the customers' power supply charges. Massachusetts charges customers directly for fuel, purchased power and wheeling costs.

Higher charges will hit CES customers four ways due to: higher fuel costs, under collection in the third quarter, a new energy conservation program that began Aug. 1, and commercial operation of the Seabrook nuclear plant.

These factors, result in an "estimate at this point of a three-cent increase, depending on price of oil," said CES's John Farnham, in the last week in August. "Perhaps it could go up a little more; but probably not much less."

CES, while highly reliant on oil-fired generation, has the benefit of Canal 1, the most efficient oil-fired plant, and the third overall, in EL&P's "Top 100 Operating Report" (Aug.'90, p.31).

In addition, the utility and state regulators have worked together with groups that have been ardent critics of CES to set up a new energy efficiency program. The five-year plan will invest $69 million, save an estimated $81 million in electricity and return the net $14 million savings to customers.

CES will "buy back kilowatts from customers," Farnham explained. All customers pay for the program's cost through the fuel charge so improvements appear free when the work is done. Residential contractors survey homes, wrap electric water heaters, insulate to reduce heat loss, and provide up to four efficient light bulbs, and a low-flow shower head. In commercial facilities fluorescent or other lighting is installed or upgraded, with high-efficiency ballasts and reflectors; larger commercial and industrial customers get upgrades in high-voltage air conditioning.

LILCo's annual fuel mix for the year-to-date second quarter was 60-percent oil, 14-percent natural gas, 13-percent net purchases, 7-percent nuclear and 6-percent independent power production. LILCo's oil requirements increase in the winter when it can't burn natural gas; gas is needed for heating—New England pipeline capacity is low.

LILCo's Northport Plant is the largest U.S. oil-fired plant, with four 375-MW units and five oil tanks. Fuel used there

Continued on page 49

LATE NEWS

NAPAP: Acid rain is no crisis. Clean Air could cost billions less, p.12, but would save 32% more oil than Iraq/Kuwaiti imports.
Congress may settle Clean Air in October. A bill could hike strategic oil reserves 33% to 1 billion bbl. Oil hit $40/bbl, a 10-yr high.
EMF doesn't cause cancer, p.13.
A federal court said Nevada must allow DOE Yucca site tests.
Arizona Public Service cuts 675, 13%, of 4908 employees. APS has cut 400 since Jan. 1.
Gulf States Utilities won't get to tell state regulators again why it should recover $1.4 billion in disallowed nuclear plant costs: Texas Supreme Court. GSU appealed.
Swiss voters keep nuclear plants open—40% of generation—but halt construction for 10 years.

Energy tax? Budget cuts?

WASHINGTON—As of mid-September, some form of the energy tax proposed by the Bush administration remained as part of the federal budget package under negotiation. The tax has been assailed as a bad idea by numerous industry groups and utilities.

If negotiators fail to strike a compromise package for the president to sign by October, automatic, across-the-board cuts of more than $100 billion will take place, according to the Gramm-Rudman deficit-reduction law.

Those federal budget cuts would involve the Department of Energy and other energy departments/agencies.

Energy tax to cut deficit

The "Btu" or "carbon-content" tax, proposed as part of a deficit-reduction package, could raise more than $14 billion of the $25 billion sought in new taxes annually.

"Such taxes are regressive, inequitable and anti-competitive," according to a joint statement by the Edison Electric Institute, American Public Power Association, the National Rural Electric Cooperative Association and the American Gas Association.

Consumers, income classes, industries and regions would bear uneven burdens on essential services, and harm the economy and U.S. global competitiveness, the statement said.

Non-contiguous Pacific (Alaska and Hawaii)	67.1%	14.4
New England (CT,ME,MA,NH, RI,VT)	38%	61.3
Middle Atlantic (NJ,NY,PA)	16.7%	91.5
South Atlantic (DE,DC,FL,GA,MD, NC,SC,VA,WV)	7.5%	68.4
Pacific Contiguous (CA,OR,WA)	3.6%	15.6
5 Other Regions (28 States)	(Each <1%)	15.6
Total U.S.	5.7%	206.9*

OIL IMPORTS

SUITE 800 COPY # 1
CONGRESSIONAL INFO SERVICE002
4520 EAST WEST HWY
BETHESDA MD 2081
41001273O2*1001907 000000 142
**********5-DIGIT 2081

NEWS BRIEFS

MARK T. HOSKE, News Editor

Substation safety rules: no umbrellas or leaning

Use your head, as well as protective headgear at substations, Puget Sound Power & Light Co. told employees recently in a safety booklet and in the weekly employee newsletter, "The Outlet."

Employees unfamiliar with substations are especially at risk from carrying umbrellas, bumping into things, or just leaning against wires, terminal strips, fuses, or other exposed items. "Things [in substations] are not insulated like they are in our homes, so it's easy to accidentally bump into something ...and ruin your day," said Puget Power's Jim Boyd, safety coordinator, and co-author of the booklet. The booklet, with input from across the company, covers safety tips prior to arrival at a substation, the buddy system, operation of vehicles in substations, observation rules for employees without substation responsibilities, and the hazards of climbing fences, equipment or ladders. "Keep your hands in your pockets," added Boyd.

Industry transitions

William D. Barnard was appointed executive director of the Nuclear Waste Technical Review Board. National Hydropower Association named **Sen. Dale Bumpers** (D-AR) Hydropower Person of the Year. **Robert K. Harbour** was named president and COO of Iowa Southern Utilities Co. as well as vice president of the parent company, Iowa Southern Inc. Harbour was also elected to the holding company's board. **Calvin Kent** was sworn in as DOE's administrator of the Energy Information Administration. **Frank E. Lammers,** president of Peabody Engineering Corp. has been re-elected president of the American Boiler Manufacturers Association. **Neil A. Norman,** Bechtel National Inc., was installed as president of the National Society of Professional Engineers. **Paul L. Ziemer** was sworn in as assistant secretary of energy for Environment, Safety and Health.

Consumers Power wins in safety

Consumers Power employees have won the National Safety Council's (NSC) First Place Award each of the last three years. "Maintaining such a high level of safety performance as Consumers Power's employees have, over such a long period of time, is indeed a demonstration of national leadership in industrial safety," said NSC Vice President Thomas J. Decker. Consumers Power, based in Jackson, MI, has received the award six times in the past nine years. In 1989, the company recorded a lost workday incident rate of 0.09. By way of comparison, the average lost workday incident rate in the utility industry last year was 0.89. (NSC's rate = no. of lost workday cases × 200,000 ÷ total hrs worked.) Company employees worked 7.8-million hours safely from Dec. 5, 1988, to May 2, 1989.

NRC proposes fine

The Nuclear Regulatory Commission staff proposed a $25,000 fine against Illinois Power Co. for two violations of NRC safety procedures during the withdrawal of reactor control rods at the Clinton Nuclear Power Plant in Clinton, IL. Operators allegedly failed to note that turbine-generator bypass valves had partially opened, allowing some steam to bypass the turbine and enter the main condenser.

DOE radwaste director sets management plan

John W. Bartlett, director of the Energy Department's office of Civilian Radioactive Waste Management (OCRWM), issued the Management Systems Improvement Strategy in August. The 20-page management approach shows how the OCRWM will achieve the Congressional mandate for developing a disposal system for spent nuclear fuel and high-level nuclear waste. "The disposal of this waste in a safe and environmentally acceptable manner," Bartlett said, "is a key factor in the maintenance and restoration of the nuclear power industry." DOE plans to establish a capability to begin accepting, transporting, and storing waste in a Monitored Retrievable Storage facility by 1998 and the emplacement of the waste in a permanent geologic repository by 2010.

Coal, employees arrive at Zimmer plant

First coal was unloaded at Zimmer Station in July, and staffing needs are nearly met. Consolidated Coal Co. supplied 6000 tons of Ohio coal, unloaded from barges. Zimmer will burn 3.5-million tons of high-sulfur coal per year. The 1300-MW station will need 275 employees. About 100 will come from within Cincinnati Gas & Electric Co. CG&E Electric Production is assisting the Employment Division with hiring. CG&E, Dayton Power & Light Co., and Columbus Southern Power Co. (AEP) own the plant, due to operate in April 1991.

Industry recognizes leading achievements

Recent awards include:

- **Texas Utilities** Co., which received "Special Distinction" recognition in the Edison Electric Institute's fourth annual Common Goals award. TU's "Paint the Town" program has improved homes and community service facilities, increased public awareness, served its communities and increased employee pride. The program has grown to 7500 active and retired employees.
- **Pacific Gas & Electric Co.** received the state of California's first Air Pollution Reduction Award for pioneering work to remove hydrogen-sulfide gas from geothermal steam and reducing hazardous wastes by as much as 90 percent at The Geysers Power Plant.
- **Richard Balzhiser,** president of the Electric Power Research Institute, received one of five awards for worldwide environmental and energy related achievements at the annual Responsive Energy Technologies Symposium and International Exhibition (RETSIE). "He was selected because of the work EPRI has been doing in anticipating and improving the energy choices available for the future," said Richard Green, RETSIE's executive director.
- **Bertrum Wolfe,** vice president and general manager of GE Nuclear Energy, received the Walter H. Zinn Award for outstanding contributions to the 'advancement of nuclear power. Wolfe was commended for work in almost all phases of nuclear energy: reactor design, fuel supply, waste management, and development of new reactor concepts, according to the American Nuclear Society.

Another state leans toward competitive bids

The staff of the Ohio Public Utilities Commission has recommended guidelines for competitive bidding for energy resources within the commission's least-cost planning process. Under the plan, utilities could still acquire resources through other means. The plan needs commission approval. Staff suggested that the commission not be directly involved in bid evaluation and selection, but that the process should follow commission guidelines. Generation and conservation bids should be conducted separately; utilities or their affiliates should not be allowed to participate in the utility's own bid requests.

Cablec finishes sell-off

Cablec Corp.'s Brand-Rex Co. completed the last of a series of divestitures of businesses unrelated to its core cable business. Brand-Rex sold North Carolina Modular Products Group to Hubbell Inc. Since Cablec bought Brand-Rex in June 1989, divestitures have brought more than $125 million, the company said. "We intend to strengthen our position in the electronic cable business through new product development, increased production capacity and strategic acquisitions," said Charles Killeen, Brand-Rex Electronic and Industrial Group.

PS Co. of New Mexico looks at buyout idea

Public Service Co. of New Mexico is looking with a "preliminary expression of interest" at a buyout offer of $12 per share from Wheeler Peak Capital Corp. WPCC is led by a former senior vice president and chief financial officer, Albert Robison. Robison was involved in PSNM's restructuring proposal in 1987. That failed proposal involved splitting the company into two companies, generation and distribution (GENCo and DISCo).

SoCalEd-plant experts assist space shuttle

San Onofre's Chiu, Phoenix, Heise helped find a Shuttle hydrogen leak.

Southern California Edison Co. experts used thermography and trouble shooting technology to help locate evasive hydrogen leaks that have grounded the U.S. Space Shuttle fleet. SCE lent Chong Chiu, William C. Phoenix, and Brian Heise from the San Onofre nuclear plant to Shuttle contractor Rockwell International, Space Systems Division, in July. The team demonstrated thermography—infrared-video and still cameras used to analyze thermal patterns. That technology is used at San Onofre to inspect electrical and mechanical components. Chiu leads the plant's "Root Cause" investigation team.

M.C. Cioffoletti, vice president of Rockwell Space Shuttle Integration and Cargo Systems, stated in a letter to the SCE team, "The use of your equipment and support personnel assisted us in returning the Shuttle fleet to flight status in the shortest possible time."

IN THIS ISSUE

INDUSTRY NEWS

The Iraq-Kuwaiti crisis impacts the electric utility industry. 1
Proposed energy tax is called regressive, bad policy and an undue burden. 1
Nevada misused DOE waste respository grants according to a GAO study. 3
For Sale: Centel's electric utility operations in Kansas, Colorado. 6
Venerable A.B. Chance Co. once again is a private concern and its management looks to a bright future. 14

GENERATION TECHNOLOGY

Nuclear plant maintenance, upgrading get increasing attention here and abroad. 20
Clean Coal Technology Round III is on the move again, at last. 17
Solar energy aided demand-side management in upper New York State. 17

T&D TECHNOLOGY

Mobile data systems help increase crew efficiency. 27
Utilities and nurseries cooperate in tree-planting program. 27
New anchoring system undergoes field tests. 28
Lighting control helps Arizona Public Service meet city ordinance. 29

REGULAR FEATURES

Commentary and **Letters** 4
Labor/Management Concerns 24
Information/Control Systems 35
Calendar 44
New Products 45
New Literature 46
Readers' Service 51
Regulatory Review 59
Management Methods 60

COMMENTARY

The unlearned lesson learned?

If only Mary Poppins were real! You'll recall that she's the one who sang "A spoonful of sugar makes the medicine go down...in a most delightful way." Looking at prices on the gas pump recently, I couldn't help thinking that we could use a dose of sweetening, in a real sense, to swallow the necessary medicine to alleviate our energy maladies...practically and permanently.

I couldn't help but wonder what might have happened if we had followed through on our initial resolve following the oil embargo in the mid '70s. With Jimmy Carter's declaration of the Oil Crisis (he insisted on calling it THE Energy Crisis, as did most media) being the moral equivilent of war ringing in our collective ears, the whole nation embarked on a strategy to get off our petroleum binge and slash our dependency on foreign energy sources. Synthetic fuels, oil shale and oil sands, coal gasification, stringent auto mileage requirements all were aimed to achieving that goal. But as soon as the price of petroleum and its byproducts began to fall again, one-by-one anti-dependency measures fell by the wayside. Cheaper oil prices meant synthetic fuels wouldn't be cost competitive right away, so dump the development programs. Oil sand and oil shale developments were too costly and inefficient. Coal gasification lost its luster. Car makers that were quick to cut vehicle weights to reduce fuel burn initially objected to continuing to meet tougher fleet mileage requirements because they were increasingly expensive. Big cars came back. Plastics are more pervasive in our lives. Our thirst for oil surged again.

So today—a decade and a half later—we're right back where we were...in fact even worse off than in the '70s. We're more dependent on Mideast oil than ever...more scared of what loss of Mideast oil would do to the economy.

There's no question about it, we're suffering an *Oil* Crisis again. Not an *Energy* Crisis. We have a more than adequate natural gas supply. Electricity based on domestic coal, uranium, hydro and gas—and little oil—remains abundant and still relatively cheap. But we're again strung out by our insatiable craving for petroleum, primarily for transportation. Paranoia about life with reduced petroleum has triggered a precipitous decline on Wall Street and in world financial markets. We're even ready to go to war for oil.

The lesson has been taught again. Will we learn? Do we have the purpose to pay the premium now to eliminate a repeat of this painful process again? Sure we will...at least until prices at the pump fall again.

No how do you spell that magic word again? S U P E R C A L I.....what?

CECo's problems continue

The trials and tribulations of Commonwealth Edison Co. continued in late September, raising new questions about service reliability, rates and its own maintenance management programs. The recent problems that have hit the Chicago-based utility mark a new low point in the turnaround from the 1970s and early 1980s, when its nuclear plants contributed to rates that were among the nation's lowest, reliability was high and its reputation was impeccable.

Today CECo's rates are among the nation's highest. Its completion of nuclear plants under construction raised the ire of customers and the Illinois Commerce Commission. Recent outages—two major ones a week apart in late summer and four additional less-severe blackouts in mid-September—heap additional fuel on the fires of discontent confronting the company. CECo's franchise with Chicago ends Dec. 31 and is in question.

All of this goes to show what happens when the utility, customers and regulators don't march to the same drummer. CECo management believed it economically responsible to complete the nuclear plants it had started. The commission and various consumer advocacy groups disagreed. Attempts to develop fair and responsible rate adjustments have failed.

Was maintenance of power delivery equipment postponed in the face of surging nuclear plant construction costs in the mid- to late-'80s? Has it slipped further in light of the company's sagging financial status? The state commission is launching an investigation. The mood of customers and politicians being that they are, it seeks unlikely that CECo will get what it needs most—responsible long-term rate relief.

Robert A. Lincicome, EL&P Editor-in-Chief

EL&P ELECTRIC LIGHT & POWER
1250 S. Grove Ave., Barrington, IL 60010

Arthur L. Rice, Publisher
Robert A. Lincicome Editor-in-Chief

PennWell PUBLISHING COMPANY

708-382-2450
Fax: 708-382-2977

Henry Stein, Senior Editor-Generation
H. Wayne Beaty, Senior Editor-Transmission/Distribution
Mark T. Hoske, News Editor
B. J. Davidson, Assistant Editor
Jill F. Minner, Special Projects Editor
Dianne Wilson, Editorial Assistant-Products/Literature
William Kenworthy, Legal/Regulatory Editor
Ted Pollock, Management Editor
Richard D. Alaniz, Labor/Management Editor
Anthony F. Cantarella, Safety/Training Editor
John D. Turrel, Contributing Editor

ELECTRIC LIGHT & POWER (USPS 858-860) is published monthly by the PennWell Publishing Company, 1421 S. Sheridan Road, Tulsa, OK 74112. © Copyright 1990 by PennWell Publishing Company. All rights reserved. Officers of PennWell Publishing Company are Philip C. Launger, Jr. Chairman/Chief Executive, Joseph A. Walkley, President, Joseph T. Bissette, Group Vice President, John Maney, Vice President/Finance. Electric Light & Power editorial offices are located at 1250 S. Grove Avenue, Barrington, IL 60010. Phone (708) 382-2450. Distributed to executives and engineers in U.S. electric utilities and consulting engineering firms. Second class postage paid at Tulsa, OK. Subscription: $42 per year (U.S.), $73 (foreign), $118 (foreign air mail). Single issue price $4 + postage ($7 + postage foreign). Copies of back issues are available on microfilm from Univ. Microfilm, 300 N. Zeeb Road, Ann Arbor, MI 48103, and on microfiche from Micro-Photo Div. of Bell & Howell, Old Mansfield Road, Wooster, OH 44691. POSTMASTER: Send address changes to ELECTRIC LIGHT & POWER, P.O. Box 3010, Tulsa, OK 74101.

VBPA ABP Advertiser and advertising agency assume liability for all contents (including text representation and illustrations) of advertisements printed, and also assume responsibility for any claims arising therefrom made against the publisher. It is the advertiser's or agency's responsibility to obtain appropriate releases on any name or individuals pictured in the advertisement.

LETTERS

O_2problems, too?

Global warming is currently a "hot" subject and everyone is pointing to the increase in carbon dioxide (CO_2) in the atmosphere as the main cause for this warming trend. If there is an increase in CO_2 then there should be a corresponding decrease in the oxygen (O_2) content of the atmosphere. How come no one talks about it? My calculations show that a 4% increase in CO_2 results in a 3.2% decrease in O_2 by weight.

Since O_2 is so vital to the proper functioning of the human body, especially the brain, shouldn't this be of concern to the scientists? What would be the safe limit below which life on this planet could be threatened because of lack of sufficient oxygen in the air? I am groping for some answers, I hope some of your readers who are knowledgeable in this area will enlighten me. Thank you.

N. D. Sadanandan
Tennessee Valley Authority
Hixson, TN

Sweet heresy!

I cheered wildly within as I read Mark Hoske's totally irreverent, but oh so enlightening "Strategies for the '90s." (*EL&P*, Aug. 1990, p.3.)

"Ignore heat rate?" I got my utility start in plant results engineering when Phil Sporn *et al* were pushing heat rates in the same directions as their golf scores, that is if they could pull themselves away from their plants long enough to play a round or two. Anathema, I shrieked to myself. Then proponent Dave Jones' logic sank in, making complete business sense.

"Forget pricing?" And push customer service instead? In his advice that utilities rethink customer relations, Joel Gilbert's mimicking a utility manager's care-less-ness turned my thoughts inward. I was reminded of when the gut-wrenching bumpersticker "You've obviously mistaken me for someone who cares" zoomed past me for the first time on my commute to work. As a utility middle manager I couldn't internalize it then, and I still abhor its message. The only way I can rationalize Gilbert's thought-provocation within utility industry management is this:

There is a steadily growing perception among utility rank-and-file that they have been forgotten by *uncaring* management. The tragedy of the matter is that utility executives *give the impression* of being unconcerned, bringing employee morale to an all-time low. Utility employees perceive their managements as totally preoccupied and distracted by external imperatives while neglecting important internal aspects of company and industry cultures. There is always something more pressing to their managements than themselves, employees reason, and, in a *de facto* sense, they are right. Executives are perceived as busily and exclusively engaged in fighting external fires, while ignoring employee-smoldering within until some crisis erupts. Today, when perception is reality, enlightened utility managements will not allow important employee issues to languish due to benign neglect, not if we hope to provide the kind of services our customers expect of us—services, such as Joel Gilbert reminded, that "utility customers will choose...primarily on human relations."

"Keep staff to cut costs?" Richard A. Mazzini's powerful third point presupposes a talented pool of employees (as motivated by caring management!) to make the difference between business success and failure in these tough times.

I cheered the loudest when I came to where PP&L "trimmed layers." Then I realized that I had read it with a Shakespearean fervor. I mistakenly though it said "trimmed lawyers!"

Name withheld by request
Editor's note: Always glad to see readers enjoy our reports of novel and unusual solutions to industry problems. There's more due in coming issues.

Energy taxes

The proposed Btu and carbon energy taxes, together or separately, would be economically self-defeating. They would in fact help to widen the trade deficit, because the energy taxes will be passed on to consumers through higher prices for domestically produced goods. One result would be to lower the comparative price of imported goods, making them more attractive for Americans to buy. At the same time, the higher price of U.S. exports would reduce U.S. global economic competitiveness and depress overseas sales.

The two energy taxes will cause federal outlays to increase as the Nation's social welfare system expands to help pay for such necessities as heat, cooking fuel and electricity for the sick, the poor, the fixed-income elderely and other needy groups.

Although some have been reported as arguing that energy excise taxes would fall in roughly equal proportion to income for most taxpayers except the very poor and very wealthy, as a utility executive I can tell you that there are many other people who already are confronting "heat or eat" decisions. Further burdening them with such regressive taxes is unconscionable.

The proposed energy taxes also are grossly inequitable because they discriminate against states with energy-intensive manufacturing economies, some of which, like Michigan, are major exporters of U.S. goods. Such inequity would perpetuate the "regional warfare" that has characterized much of the Clean Air Act debate. The top 10 energy-intensive states will pay more than 50 percent of the total tax raised, at a time when the Clean Air Act Amendments expected to pass the Congress this year will impose onerous new economic burdens on energy and other manufacturing operations through tighter emission controls. The additional cost for Michigan alone of either the proposed Btu or carbon energy tax could be more than $1 billion, much of which would fall on energy-intensive manufactured products facing intense foreign competition.

Behind the move to unfairly focus on energy as a source of new tax revenue lies a misconception that our national energy use has been excessive and that energy prices have ballooned. Some have suggested that a tax on the consumption of energy would discourage its "excessive use." Energy, though, is largely a necessity and a great deal of conservation and energy efficiency already have occurred. Imposing an indiscriminate tax on all energy use to cut the deficit is neither wise economics nor energy policy.

But let the final words be those of President Bush, who recently told a press conference called after his decision to take a new look at taxes, "I think taxes wrongly applied can kill economic growth."

William T. McCormick, Jr.
Chairman and CEO
Consumers Power Co.
Jackson, MI

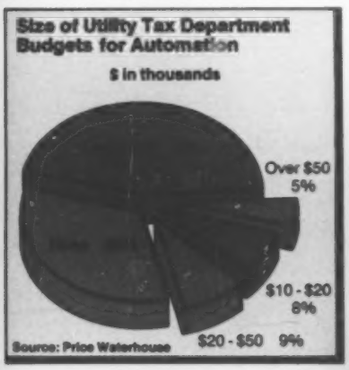
Automated taxes would benefit utilities, says survey

NEW YORK—Utilities haven't spent as much effort automating their tax departments as other areas, and could save money by doing so, suggests a recent study by Price Waterhouse.

"In the utility industry last year, income, property, and other tax expenses consumed 11.5 percent of operating revenues nationwide, based on data we have collected," said William H. Walker, managing partner for tax service in Price Waterhouse's Public Utility Industry Services Group.

The report was released in August and was based on a fall 1989 survey that included 90 utilities. More than 60 provided electric or combined electric and gas services.

"Despite the importance of taxes, in many cases the tax function in public utilities has remained essentially unchanged while the technology capable of revolutionizing operation has developed," Walker explained.



Automation benefits

The Price Waterhouse study shows how public utilities' tax departments may benefit from automation. Computer tax-return processing and electronic tax research automation could:

- Streamline workload.
- Improve making deadlines.
- Eliminate duplicate record keeping by data sharing.
- Improve analyzing transactions or IRS positions during negotiations.

"78 percent had annual automation budgets of less than $10,000"

- Allow managers additional time for tax research and planning.
- Compute tax depreciation with utility specific software.

The survey seemed to show piecemeal automation implementation among utilities' tax departments.

Formal automation plans

Only 42 percent of respondents had formal automation plans for their tax departments, while 78 percent had annual automation budgets of less than $10,000. About 33 percent had no automation budgets, even though 61 percent of the respondents had annual revenues of more than $500 million. Of the ones that did have automation, two-thirds were PC-based.

Free copies of a 28-page "The Public Utility Industry—Tax Department Automation" may be obtained from William H. Walker, Price Waterhouse, P.O. Box 1097, St. Louis, MO 63188.

10-y[illegible] air study: get cleaner air for billions less

WASHINGTON—While Congress hammers out differences in Senate and House Clean Air bills, a $500-million 10-year final report mandated by Congress suggests less stringent measures would provide as much environmental benefit for billions of dollars less a year.

The National Acid Precipitation Assessment Program (NAPAP)—history's most comprehensive acid-rain study—says that the timing of emissions reductions is not critical to the environment, especially in the short term (1-10 years).

Based on the findings, the Edison Electric Institute said, "before Congress and the administration reach a final decision on the most expensive, encompassing clean-air regulations, we strongly encourage them to closely examine NAPAP's report."

The National Coal Association pointed out that NAPAP's "evidence indicates that an 8-million-ton reduction of sulfur dioxide emissions will cost about half that of the currently proposed 10-million-ton reduction, with little or no impact on environmental benefits."

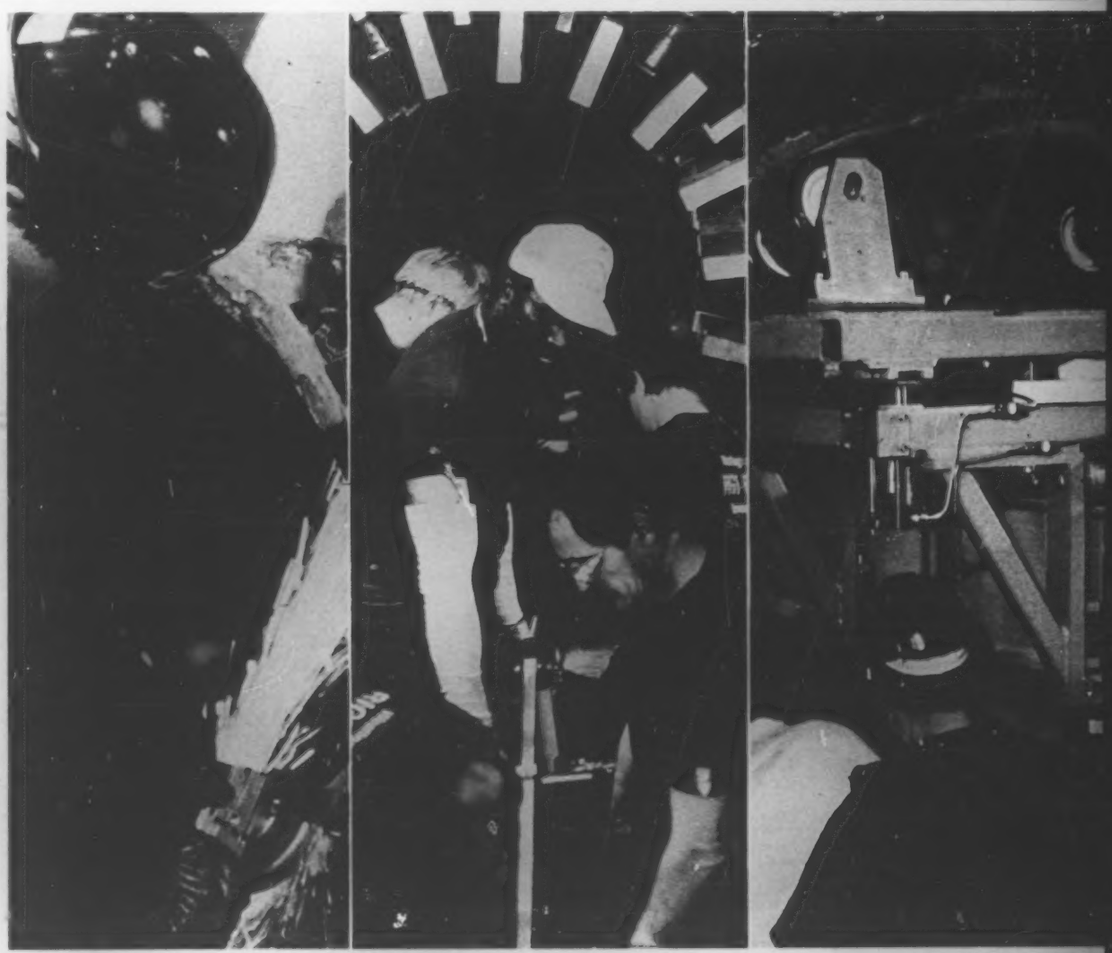
Proposed legislation's acid-rain provisions are likely to cost $5-7 billion per year.

Advice: let Treasury Dept. help EPA

In related news, a broad coalition made up of 11 industry and consumer groups urged Congress to give the Treasury Department the responsibility for implementing the allowance auction program in the Clean Air Act Amendments, still in conference as of mid-September. Both versions give the Environmental Protection Agency exclusive responsibility for the auction.

"The Treasury Department has the expertise necessary to minimize the administrative burden of these programs, and therefore help assure a workable and efficient market for allowances," the groups told Congress.

For more NAPAP and Clean Air news, see *EL&P*, April, p. 1, and future issues.



DAY 1 DAY 6 DAY 11

If We'd Started Your Rigi-Flex Rewind A Month Ago, We'd Be Finished Tomorrow.

32 days. That is all we need to replac your old generator winding with a new Rigi-Flex winding.

In 1986, Westinghouse engineers began developing a cost-effective in-field upgrade program that would enable us t remove the windings from large 600 to 1500 MVA generators and replace them with superior Rigi-Flex components. This program is now the industry standar **32 days. And your stator never leave the ground.**

We work with you to define a precise and complete work schedule. 38,513 stat of-the-art parts are tested and shipped

from page 1

Oil price hikes...

increased to about nine times the pre-embargo price, according to the National Coal Association. (Other industry statistics appear at the end of this report.) These increases resulted in fuel switching, decrease in oil-fired dependency, and slowed demand, skewing traditional utility growth curves.

Rate hikes; cheaper oil in stock

Customers of utilities reliant on oil-fired generation for the majority of their capacity can expect rate hikes from the higher oil prices. These added costs are usually passed directly to customers in a fuel clause. But credit agencies warn that utilities faced with these hikes, might receive less favorable treatment from regulators on pending or near-future rate hikes.

Oil price hikes hit during the tail-end of the summer season, when utilities may rely more heavily on oil for peaking plants. However current oil stocks, purchased at lower prices, could carry some utilities through the peaking season (see below).

Utility fleets will incur higher gasoline prices. Some Iraq-Kuwaiti replacement oil is "sour," higher-sulfur crude, unsuitable for some U.S. gasoline refineries, oil companies explained.

Utility groups promote efficiency

Representatives of EEI and their European counterparts in the International Union of Producers and Distributors of Electrical Energy (UNIPEDE) met in Zermatt, Switzerland, the first week in September to discuss topics including oil supply vulnerabilities.

In a joint statement, EEI and UNIPEDE said, "Electricity offers an excellent opportunity to reduce the use of oil in many applications because it can be produced from a wide variety of fuels and in a wide variety of ways, including renewables and nuclear."

Both groups urged conservation of energy resources and supported measures leading to increased energy efficiency. They also encouraged policy makers to exercise leadership in promoting consistent long-range measures to support siting and construction of necessary electric generating plant and transmission facitilities.

Expected hike: natural gas demand

Some analysts suggest severe increases in oil prices could ripple into natural gas, a fuel that's due to supply more than half of the new U.S. generating capacity over the next eight years. Increased demand for gas by fuel switching could contribute to that a short-term increase in the spot market and long-term increases as contracts expire.

A representative of the American Gas Association said that plentiful U.S. natural gas supply could immediately replace the equivalent of 160,000 barrels of oil per day. If additional pipelines are added, natural gas could replace 480,000 bbl/day, according to AGA's Carl Erickson, quoted in *Public Power Weekly*, Aug. 13.

That publication reported that public power utilities have switched from oil to natural gas where possible.

Crisis, non-oil solutions

Industry leaders for various non-oil fuels and energy supplies are promoting additional investments in their areas as a result of the crisis. The Department of Energy said, however, it expects no dramatic change in the developing National Energy Strategy due to the crisis. Large emphasis has already been placed on energy efficiency in the emerging NES (*EL&P*, May '90, p.3).

DOE had mentioned the possibility of dipping into the National Strategic Petroleum Reserve, but the administration said the shortfall doesn't yet warrent touching the reserve. At its own facilities, DOE instituted fuel-switching where practical and increased efficiency to save oil.

The International Energy Agency governing board meeting in Paris, completed on Aug. 31, also discussed the energy crisis.

Secretary of Energy James D. Watkins said, "The IEA, with the strong support of the United States, called upon its member countries to act in concert to reinforce long-term energy security by strengthening policies to promote greater energy efficiency, conservation, fuel diversity, and increased indigenous oil production.

"The steps we are taking," Watkins continued, "are consistent with the IEA call and demonstrate our resolve to act in coordination with our allies to mitigate the effects of the Iraq-Kuwaiti oil shortfall."

U.S. and world oil reserves were at near record levels at the time of the crisis, but DOE still plans to:

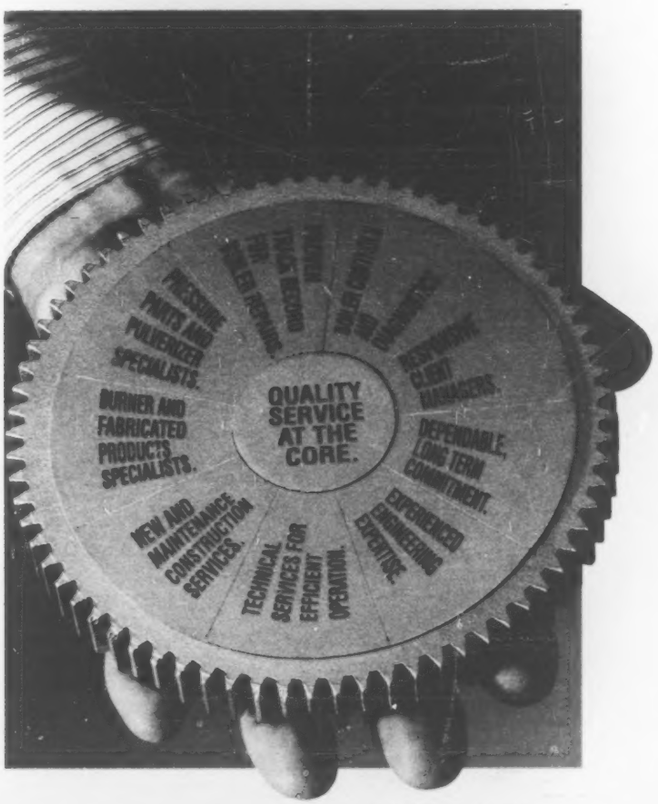
- Monitor oil inventories.
- Start advertising in the second week of September to encourage conservation.
- Promote gasoline that includes alcohol or methanol.
- Try to encourage burning garbage as electricity and steam fuel.

Sustained higher oil prices could increase oil companies' domestic production and exploration into regions considered unprofitable at lower prices. DOE may take direct steps to encourage more U.S. production. The administration said it believed that tax breaks might be possible to encourage domestic drilling.

Several opinion polls address related issues. In a recent survey, 86 percent of those responding said conservation should be a part of an energy strategy. The same percentage said the U.S. needs to adopt a new national energy policy (which it is doing). Texaco Inc. had Penn + Schoen Associates Inc. conduct the 978-interview survey during August.

A recent Gallup Organization poll of 1012 adults, released by U.S. Council for Energy Awareness, said 70 percent of the respondents agreed that nuclear generated electricity reduced dependence on foreign oil. About 78 percent said nuclear energy would be either very important or somewhat important in meeting future energy needs.

Continued on page 49


QUALITY SERVICE AT THE CORE.
BURNER AND FABRICATED PRODUCTS SPECIALISTS.
NEW AND MAINTENANCE CONSTRUCTION SERVICES.
TECHNICAL SERVICES FOR EFFICIENT OPERATION.
EXPERIENCED ENGINEERING EXPERTISE.
DEPENDABLE, LONG TERM COMMITMENT.
CLIENT MANAGERS.
PRESSURE PARTS AND PULVERIZER SPECIALISTS.

Now you know what makes ABB Combustion Engineering Services so good for your boilers.

At ABB Combustion Engineering Services we're always geared up to give you the best in quality service.

It's our job to help you make sure your plant is running at peak efficiency and productivity. Which is why we try to mesh our service capabilities with your needs. Our Technical Services staff, for instance, will inspect your steam generating equipment and trouble-shoot potential problems. And our Construction Services division will assure that your plant upgrade, major modification, scheduled maintenance, or emergency outage work is of the highest quality, yet is completed in the most timely, safe and cost-effective manner.

And along with quality service, we offer quality products – products recognized around the world for their superiority and dependability. Each one comes with value added and is designed to produce real savings for you by helping you to avoid the expense of forced outages and downtime through innovative solutions for your operating boiler plant problems.

Service is more than just a word with us. It's the very core of our business. There's an ABB Combustion Engineering Services client manager waiting to serve you at one of our regional offices. Call 1-800-243-1946 for the one nearest you.

ABB Combustion Engineering Services
200 Great Pond Drive
Windsor, CT 06095

ABB
ASEA BROWN BOVERI

© 1990 ABB Combustion Engineering Services

Inquire R.S. 36

Continued from page 48

Oil markets, in times of crisis, can react sharply to rumor, suggestion and anticipation, before any actual change in supply occurs. For instance, oil prices dropped nearly $2 a barrel on Aug. 29 after OPEC decided to replace the oil production shortfall from the Iraqi/Kuwaiti oil blockade.

Financial markets are also affected. The Dow Jones Industrial average plummeted below 2500 in the days following Iraq's invasion of Kuwait because of oil supply uncertainties and the risk of war and/or recession. The 15 stocks in the Dow Jones Utilities average, above 212 in July, fell to below 200 in late August.

Although still jitterish, markets responded favorably to presidents' George Bush and Mikhail Gorbachev Sept. 9 commitment to support stringent United Nation's sanctions against Iraq.

In other news, several major suppliers to the electric utility industry have subsidiary operations with employees and assets at risk in Kuwait. These include Asea Brown Boveri, of Stamford, CT, and Bechtel Group Inc., of San Francisco.

Oil-reliant utilities, statistics

The 10 most oil-dependent utilities by percentage of generation as of Dec. 31, '89, were Hawaiian Electric Co., Commonwealth Energy Systems, Long Island Lighting Co., Central Maine Power Co., Consolidated Edison Co., Boston Edison Co., Eastern Utilities Associates, Central Hudson Gas & Electric Co., Public Service Co. of New Hampshire and Florida Power & Light Co., according to Mabon, Nugent & Co., in Boston, MA.

The country relied on oil for 5.7-percent of its electricity generation in 1989, using 266.9 million barrels of oil (Mbbl). In 1989, as a percentage, New England relied on oil-fired generation the most, but the Middle Atlantic area used the most oil. These statistics are according to the DOE's Energy Information Administration (EIA) December '89 *Monthly Energy Review*.

In April 1990, the average cost of petroleum delivered to electric utilities was $16.44 per barrel, down from the year's previous high of $25.56 in January, due to high demand from cold-weather, said EIA. Year-to-date deliveries to utilities through May were down 16 percent, primarily due to milder weather.

War in the Mideast could cause the price to jump to $50/bbl within six months, some analysts contend.

Utilities had 70,608 thousand barrels of oil in stock at the end of May; utilities used an average of 22,239.7 thousand barrels per month in 1989, according to EIA, but more during peaking periods.

Largest producers

The world's largest producers of crude oil (including condensates) for the first five months in '90 in decending order are: USSR, U.S., Saudi Arabia, Iraq, China, and Mexico, according to DOE records.

Together, Iraqi and Kuwaiti fields represent 20 percent of the world's proven oil reserves; the Mideast holds about two-thirds of the total, DOE said.

Utilities set peaks

BARRINGTON, IL—New one-hour peaks were recorded recently by the following utilities:

- Dayton Power & Light Co., 2643 MW on Sept. 6, up from 2604 MW on July 9.
- Northern Indiana Public Service Co., 2739 MW on Sept. 6, up from 2738 MW on Aug. 28.
- Kansas Gas & Electric Co., 1763 MW on Aug. 28, up from 1741 MW on July 2. KG&E said its peak usage through August has grown more than 12 percent, faster than any other U.S. utility.
- Consumers Power Co., 5881 MW on Aug. 27, up from 5869 MW on Aug. 17, '88. The company said it's on its way to a seventh consecutive record sales year.
- Sierra Pacific Power, 936 MW, July 11, up from 922 MW on Feb. 7, '89.

Supplier changes name

WARRENDALE, PA—WM Power Products Inc. changed its name to Mitsubishi Electric Power Products Inc.

The change reflects new ownership of the supplier, which started in 1985 as a joint venture of Westinghouse and Mitsubishi Electric.

from page 1

2 oil-fired utilities

in August was purchased and delivered in July at $16.30/barrel (1-percent sulfur). A late August purchase cost $26.77, a 64-percent hike. The plant uses 12-million barrels of No.6 crude/year. LILCo also uses more expensive 0.7-percent and 0.3-percent sulfur No.6 fuel oil.

LILCo customer bills would increase about 2 percent from August to September due to the oil-price hikes, said LILCo's Joan Cears; the seasonal discontinuation of summer rates will offset a larger October hike. The August residential rate was 14.5¢/kWh. The May cost, without summer rates, was 13.4¢/kWh. At LILCo, about 30¢ of every $1 spent is for fuel.

LILCo—in part due to never-obtained Shoreham nuclear capacity in the shutdown deal with the state—will spend $35.2 million on 19 conservation programs in 1990. State regulators require LILCO's Energy Conservation and Load Management Department to file a two-year plan. Goals are to cut 188 MW by year's end; of that, 28 MW are slated residential, 154, commercial. The utility was ahead of schedule as of July.

Programs include direct load control programs for air conditioning and other appliances (25,000 switches installed to date); Dollars and Sense, cash for efficiency improvements (1990 goal: 1363 participants, 8.4 MW); Power Alert, consumer alert for a reduction of 42.4 MW.

Photo by Virgil Kauffman/Allstock

Selective vegetation control is for the birds.

And for deer, elk and other wildlife species. Population counts in many studies verify the natural attraction of lush, grassy right-of-way openings at forest edge for nesting, foraging and cover to wildlife.

The secret: Modern *selective* herbicides from DowElanco enhance habitat conditions by removing only broadleaf weeds and woody plants. This allows annual and perennial grasses to thrive, free from competition for moisture, sunlight and soil nutrients. Wildlife authorities note that food production benefits show up almost immediately once the right-of-way is opened with herbicide treatment. Also, with selective herbicide control, there's little or no soil disturbance—a problem that can lead to erosion and disrupt the environment when only mechanical methods are used for vegetation control.

And for right-of-way managers looking for low-maintenance benefits.
Research also proves that selective herbicides from DowElanco are more effective than other products. For example, they give excellent broad spectrum control against stubborn species most herbicides can't handle. Because they control the whole plant, results are longer lasting. Right-of-way maintenance typically can be extended to a 5-year cycle instead of the usual 2- to 3-year period.

To get the complete story on selective vegetation control, contact your DowElanco sales representative. Or phone 1-800-258-2436.

Inquire R.S. 25

Industrial Vegetation Management

© DowElanco

49